



DEPARTMENT OF THE NAVY  
NAVAL AIR STATION  
BRUNSWICK, MAINE 04011-5000

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NAS BRUNSWICK  
5090.3a

IN REPLY REFER TO  
5090  
18800/208  
February 28, 2000

Mr. Brooke Barnes  
Deputy Commissioner  
Maine Department of Environmental Protection  
State House Station 17  
Augusta ME 04333-0017

Dear Mr. Barnes,

As agreed in our January 7, 2000 meeting regarding Parcel 2 of the Topsham Annex, please find our proposed sampling plan enclosed for your information. Technical details of the plan were developed by our Mr. Williams in cooperation with your Mrs. Sait and Mr. Dearborn following their meeting in Augusta on January 18, 2000.

Groundwater quality is the remaining MEDEP environmental concern with Parcel 2 of Topsham Annex. The objective of our mutually proposed sampling effort is to characterize the groundwater quality. If results are favorable, your site licensing staff would remove the existing land and groundwater use restrictions on the parcel. Our plan slightly differs from the sampling methodology, locations, and analytes previously discussed with your staff in that no additional soil samples will be taken beyond what was obtained last year by MSAD 75. We believe soil samples requested by Mr. Dearborn at the interval 1' above the groundwater table were intended to further characterize any petroleum "smear zones" if free fuel product or fuel-saturated soil conditions currently exist at suspected "worst-case" locations on the site. We believe this soil sampling is redundant as the needed information will be obtained by our proposed groundwater samples taken from the water interface level.

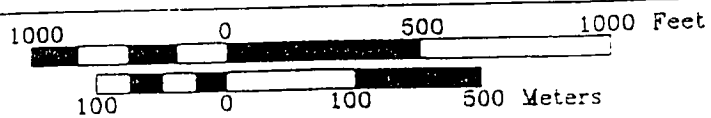
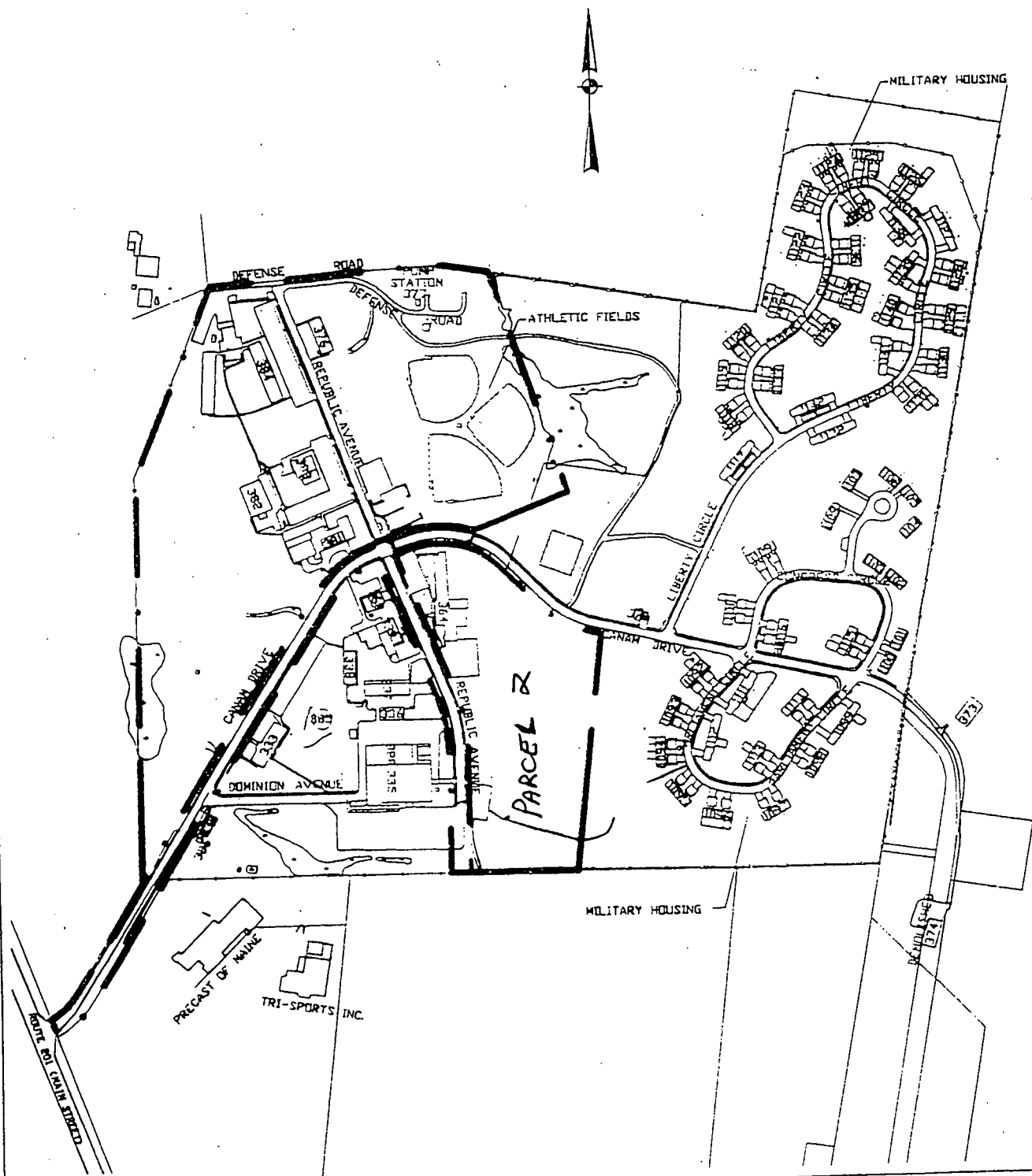
We intend to procure this field work in the spring of this year as soon as weather conditions allow. We will work closely with your staff to ensure sampling locations and other actions meet your requirements. The results of this effort will be provided to all affected parties so that questions regarding groundwater quality beneath Parcel 2 may be resolved.

Sincerely,

A. J. BALLARD  
Lieutenant, CEC, U. S. Navy  
Public Works Officer  
By direction of the  
Commanding Officer

Enclosure:

1. Parcel 2 Sampling Plan, Feb 00



— Site

Figure 3. Proposed School Site

# **PROPOSED PHASE 2 ENVIRONMENTAL SITE ASSESSMENT**

## **MAINE SCHOOL ADMINISTRATION DISTRICT #75 (MSAD #75) PARCEL 2**

### **TOPSHAM ANNEX, TOPSHAM, MAINE**

#### **1. Background**

This action is proposed to follow-up recommendations published in the US Navy's Phase 1 Environmental Baseline Survey (EBS), November 1996, to confirm the presence or absence of environmental contamination of groundwater on the subject parcel caused by past Air Force and Navy use of the property. Site location and description, historical summary of past uses of the property, previously identified areas of concern, and recommended further actions are described in the EBS. This Phase 2 ESA work is proposed in order to resolve concerns expressed by the State of Maine's Department of Environmental Protection (MEDEP) regarding site/land uses. Additional visual site inspections (VSIs), records searches, personal interviews by the Navy, grab samples of surface soils, utility line excavations on the subject parcel, and Phase 2 environmental investigations by MSAD 75 on adjacent parcels were performed in 1999. These additional investigative actions have neither identified adverse changes in environmental conditions since the 1996 EBS, nor releases of hazardous substances or petroleum products on Parcel 2 that would provide sufficient evidence to better focus the scope of this effort.

#### **2. Objectives**

This proposed Phase 2 Environmental Site Assessment (ESA) work is intended to further characterize the property in a spirit of partnership with MSAD 75 and Maine DEP. The objective of this sampling work is to scientifically determine if groundwater contamination currently exists on the subject property and, if such contamination exists, to quantify the nature and concentration of contaminants in support of future assessments that would better delineate extent of contamination.

#### **3. Scope of work**

Although there is no evidence of past releases, the Navy is proposing to perform groundwater sampling in areas where petroleum was previously stored or where groundwater quality is suspect in areas around the former Building 369, Operations Building/Central Heat Plant. Expedient sampling methods (e.g., temporary wells) are proposed in order to obtain a one-time assessment of current conditions. Sufficient analyses are proposed to quantify the potential for groundwater contamination by petroleum products and chlorinated solvents. More specific tables are attached (Atch 1) that outline the sampling actions proposed.

a. Review the previous EBS, Parcel 1 ESA (Oct 99), associated documentation, correspondence, and field observation records.

- b. Coordinate with MEDEP officials, perform utility clearances, survey, and provide coordinates for each sampling location.
- c. Use direct push (e.g., Geoprobe, Terraprobe) technology to install and remove temporary wells in order to obtain samples of groundwater at approximately 12 separate points located within Parcel 2. Probes will be advanced to a depth of 20 feet or to refusal and temporary wells installed to properly evaluate groundwater quality.
- d. Upon well removal, place metal markers at or near the surface at each well location for future reference.
- e. Sample and test groundwater from each of three (3) existing flush-mounted monitoring wells on the northeast side of Parcel 2 at the former Building 368 (gas station).
- f. Evaluate all field and laboratory data and develop conclusions with regard to contaminant levels found and applicable their respective regulatory standards.
- g. Prepare and submit a report that summarizes all field observations, findings, analytical data, and conclusions of this Phase 2 ESA effort. The report should also contain a section that provides professional recommendations for contaminant delineation and other further evaluation if necessary.

#### **4. Field Investigation Methodology**

##### **a. Field Observations**

(1) An initial walkover survey of the site and surroundings will be performed for site familiarization. The approximate locations for temporary wells shown on attached figures were selected in cooperation with the MEDEP. Overhead lines, underground utilities, and other factors may necessitate changing the proposed locations. Actual field locations will be selected in conjunction with MEDEP staff.

(2) A site-specific health and safety plan (HASP) and sampling and analysis plan (SAP) will be prepared to guide the invasive investigation activities proposed for this site assessment.

(3) Dig Safe utility clearance, review of Bldg 369 as-built drawings, and coordination with Stuart Kay of the Topsham Sewer District will be conducted prior to direct push activities in order to minimize the potential for utility impacts.

##### **b. Groundwater Evaluation**

(1) Twelve (12) exploratory direct push monitoring wells will be installed on the subject property at the approximate locations shown on Figure 2. Locations will be surveyed and coordinates provided using the Maine grid system. Upon completion of sampling activities, temporary wells will be removed and a metal plate (or other metal marker compatible with utility

magnetometers) will be placed near the soil surface of each well in order to provide a discrete marker for future reference.

(2) Groundwater will be sampled using low-flow sampling technique. For specifically designated wells, two samples will be taken at the water interface level (for POL) and from the bottom of the well (for DNAPL). One sample will be taken at only the water interface level from the remaining wells (for POL only).

(3) Groundwater sampling will be performed using MEDEP and USEPA accepted sampling and analysis procedures using a peristaltic pump and USEPA recommended low-flow methodology. Samples will be placed in laboratory containers and preserved in accordance with applicable USEPA protocols.

(5) Split samples will be provided to MEDEP on site as requested.

c. Laboratory Analysis

(1) Water samples will be transported in a cooler with ice to a dedicated refrigerator or promptly transported to the analytical laboratory in accordance with USEPA protocols.

(2) Groundwater samples will be analyzed for MEDEP recommended parameters and methods as outlined in the SAP.

(3) Analytical detection limits for the testing parameters, where regulated, will be at or less than cleanup standards or exposure guidelines established by the MEDEP.

(4) Raw laboratory data, chain-of-custody forms, analytical laboratory certifications, and the quality assurance plan (QAP) will be provided as appendices in the ESA report.

(5) Blind duplicate samples will be submitted for QA/QC confirmation purposes.

**PROPOSED PHASE 2 ESA INVESTIGATION ACTIONS**  
**MSAD #75 PARCEL 2**

<i>Investigation Designator Location/Description</i>	<i>Groundwater</i>	
	<i># Samples</i>	<i>Parameters</i>
369.1 – Bldg 369 Doorways	8	Note A
369.2 – Two 30K USTs	2	Note B
369.3 – One 12K UST	2	Note B
369.4 – Three 50K USTs	2	Note B
369.5 – Downgradient Probes	5	Note B
368.1 – Gas Station Wells	3	Note C
<i>Total:</i>	22	

Note A: VOC, SVOC, GRO, DRO, Dissolved Metals

Note B: VOC, SVOC, DRO, Dissolved Metals

Note C: VOC, SVOC, GRO, Dissolved Metals

VOC                      Volatile Organic Compounds by EPA Method 8260 including MTBE

SVOC                    Semivolatile Organic Compounds by EPA Method 8270

GRO                     Gasoline Range Organics by Maine HETL Method 4.1.17

DRO                     Diesel Range Organics by Maine HETL Method 4.1.25

Dissolved Metals      Total "dissolved" amount of eight RCRA-listed metals of concern (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Samples should be unfiltered using low-flow sampling technique. The sample should only be filtered if turbidity is greater than 30 NTUs. If turbidity exceeds 30 NTUs, turbidity level must be recorded and an annotation made in the analysis results stating the sample was filtered.

## TECHNICAL BASIS FOR SAMPLING

## MSAD #75 PARCEL 2

<i>Investigation Designator</i>	<i>Suspected Contaminant(s)</i>	<i>Suspected Source</i>
369.1 – Bldg 369 Doorways	Chlorinated solvents, petroleum	Bldg 369
369.2 – Two 30K USTs	#4 & #6 heating oil, chlorinated solvents	USTs
369.3 – One 12K UST	#4 & #6 heating oil, chlorinated solvents	UST
369.4 – Three 50K USTs	#4 & #6 heating oil, chlorinated solvents	USTs
369.5 – Downgradient Probes	#4 & #6 heating oil	USTs
368.1 – Gas Station Wells	Gasoline	USTs

Visual Evidence: A seep (“daylighting” of groundwater to ground surface) containing visual sheens and orange color was observed in the field of Parcel 2 in Feb/Mar 99 at a location approximately midway between Building 364 and the former Bldg 368, north of the former Bldg 369. One direct push well in proposed action item #369.5 is intended to be located at the suspected seep to quantify the groundwater at this location.

Previous Studies: Recommendations for further investigations published in the Topsham Annex EBS, November 1996, by HRP Associates, Inc., incorporating methodology of a Phase I ESA.

APPROXIMATE LOCATIONS OF SAMPLING SITES<sup>1</sup>

## MSAD #75 PARCEL 2

<i>Investigation Designator</i>	<i>Number of Probes</i>	<i>Approximate Location</i>
369.1 – Bldg 369 Doorways	4	One probe approximately 25' from the former SE, SW, & NW doorways of Bldg 369. On NE side, approx. 25' from former sump pit in bldg. See Bldg 369 as-built drawings for more precise placement locations.
369.2 – Two 30K USTs	1	Approximately 50' SE and 25' SW of lower SE corner of existing Bldg 364 parking lot pavement
369.3 – One 12K UST	1	Approximately 96' SE and 36' SW of lower SE corner of existing Bldg 364 parking lot pavement
369.4 – Three 50K USTs	1	Approximately 84' SW of lower corner of existing Bldg 364 parking lot pavement and 84' SE of the SE edge of Republic Ave. pavement
369.5 – Downgradient Probes	5	a. 45' SE of the SE edge of Republic Ave. pvmt and 155' S of SE corner of Bldg 364 parking pvmt; b. 20' SW of the existing Bldg 364 parking pvmt and 60' SE of the SE edge of Republic Ave. pvmt c. Geometric center of Bldg 364 parking lot pvmt d. NE corner of the Bldg 364 parking lot pvmt e. Suspected seep location, to be determined in the field by MEDEP's geologist prior to field work. Location is about 60-75' SE of NE corner of the Bldg 364 parking lot pvmt, midway between corner of parking lot and a perforated steel storm water drain grate in the field.
368.1 – Gas Station Wells	3	Existing flush-mounted monitoring wells

<sup>1</sup> Final field locations will be selected in conjunction with MEDEP staff.



## GOVERNMENT COST ESTIMATE FOR PHASE 2 ESA PARCEL 2

(Using Off-Site Laboratory for Analysis)

<i>Action / Cost Item</i>	<i># Units</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Mobilization	1 time	\$250	\$250
Surveying and Marking of DP wells (12 each)	1 day	800	800
Direct Push Vehicle/Equipment Rental	1 day	1000	1000
Laboratory Analyses (with 10% QA/QC):			
VOC (22+2)	24	100	2400
SVOC (22+2)	24	175	4200
DRO (22+2)	24	60	1440
GRO (11+1)	12	70	840
Dissolved Metals (22+2)	24	175	4200
Equipment Decontamination and IDW Disposal	LS	200	200
Demobilization	1 time	250	250
Temporary wells, sampling containers, tubing, sand, sample liners, labels, markers, other consumables	LS	500	500
Preparation of Phase 2 ESA Report	LS	5000	5000
<i>Subtotal</i>			\$21,080
Profit, Overhead, & Indirect Costs	LS	20%	4216
Contingency	LS	10%	2108
Project Total:			\$27,404
<b>Rounded Total:</b>			<b>\$27,500</b>

**REFERENCE DOCUMENTS**

1. Topsham Annex Environmental Baseline Survey, 13 Nov 96, HRP Associates, Inc.
2. Addendum, Topsham Annex Environmental Baseline Survey, 24 Feb 99, Northern Division, Naval Facilities Engineering Command
3. Phase II Environmental Site Assessment and Remedial Action Report, Topsham Annex Parcel 1, October 1999, R.W. Gillespie & Associates, Inc.
4. Draft Recommended Topsham Annex Sampling Plan, 6 January 2000, Maine DEP.
5. As-Built Drawings, NASB Project N62472-84-C-2521, Demolition of Operations Building 369 and Supporting Facilities
6. State of Maine Department of Environmental Protection Regulations, Chapter 691, *"Rules for Underground Oil Storage Facilities"*
7. ASTM E1903-97, *"Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process"*
8. ASTM D6282-98, *"Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations"*
9. Maine DEP Draft Document, *"Remedial Action Guidelines for Hazardous Substances in Soil"*
10. State of Maine Department of Environmental Protection Regulations, Chapter 850, *"Identification of Hazardous Wastes"*
11. State of Maine Department of Environmental Protection, *"Procedural Guidelines for Establishing Standards for Remediation of Oil Contaminated Soil and Groundwater"*

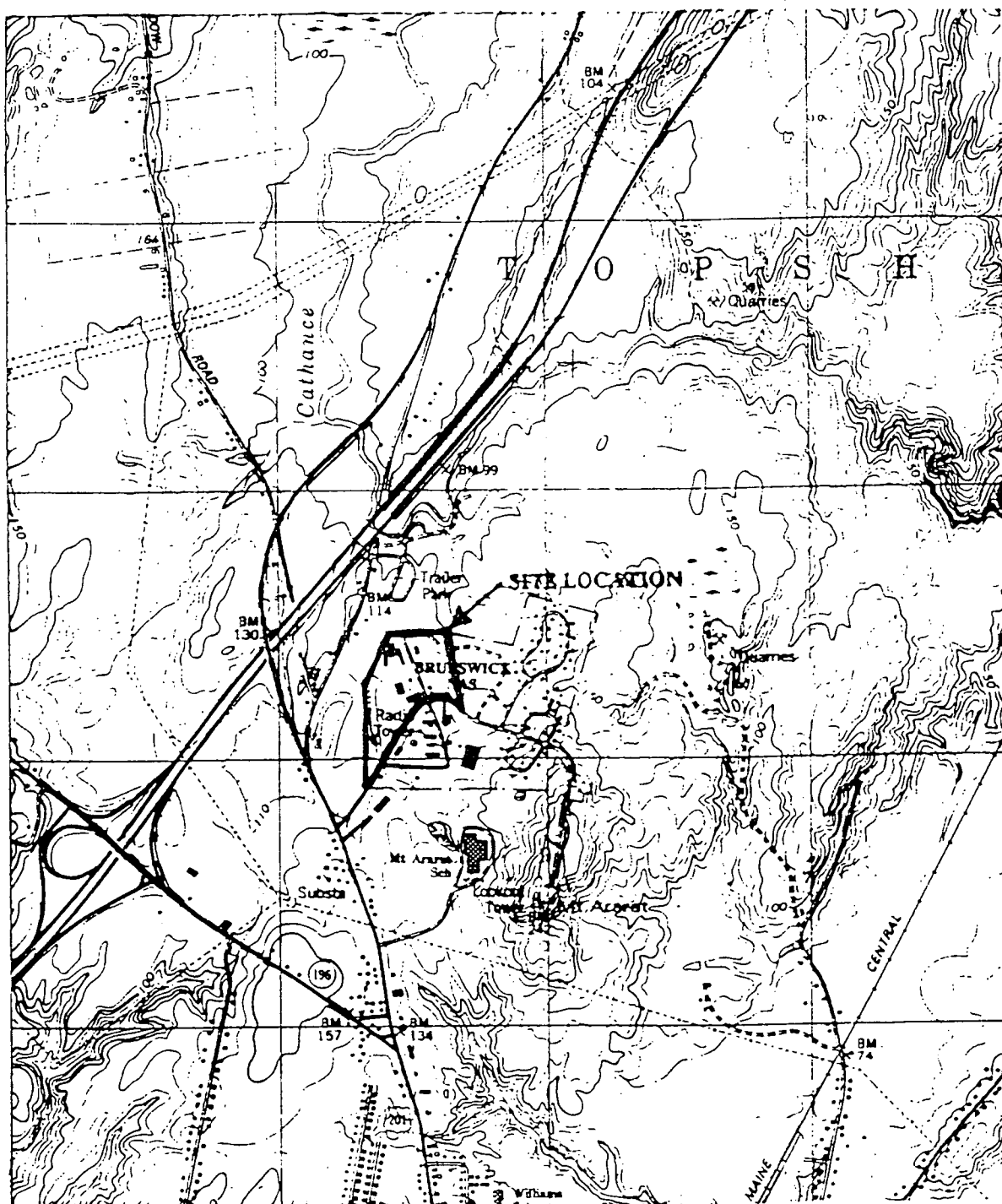


FIGURE 1  
LOCUS MAP  
ENVIRONMENTAL SITE ASSESSMENT  
TOPSHAM ANNEX - PARCEL 1  
TOPSHAM, MAINE

APPROX. SCALE: 1 INCH = 2000 FEET

NOTE: ADAPTED FROM USGS BRUNSWICK, MAINE  
7.5' QUADRANGLE MAP



OCT 1988

PROJECT NO. 886-03

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